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ABSTRACT

This study compared student outcomes and evaluations in nine educational psychology courses across: (1) student variables (age, gender, ethnicity, student status, and major); (2) instructor variables (experience teaching at the college level, experience teaching at the K-12 level, and educational level); and (3) course variables (placement of educational psychology in the program, one- or two-semester sequence, use of case studies, class size, clinical requirements, and number of reflective activities required). The study sample consisted of predominantly undergraduate elementary education majors (n=181) taking educational psychology courses in teacher education programs at three universities over two semesters. Data collection involved pre- and post-course assessments, examination of student grades, and analyses of course materials. Results indicated that there were differences in outcome related to instructor degree, variation in student characteristics, and placement of the educational psychology course in the program and whether it was a one- or two-semester course. An appendix presents the study assessment forms. (SM)

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The Teaching of Educational Psychology: Comparisons Across Student, Instructor, and Course Variables

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Running Head: TEACHING OF EDUCATIONAL PSYCHOLOGY

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Abstract

In the present study, student outcomes and evaluations in educational psychology courses were compared across student, instructor, and course variables. The sample consisted of predominately undergraduate educational psychology courses in teacher education programs at three universities over the course of two semesters. Pre- and post-assessments, student grades, and analyses of course materials were used in the comparisons. Differences in outcomes were found in relation to instructor degree, student variation, and placement of the educational psychology course in the program and whether it was a one-or two-semester course. Implications for the role and structure of educational psychology in teacher education were drawn as well as recommendations for future research.

The Teaching of Educational Psychology: Comparisons Across Student, Instructor, and Course Variables

The role of educational psychology in teacher preparation programs has recently been called into question (Anderson et al., 1995; Shuell, 1996). Educational psychology is a discipline deeply rooted in the scientific empirical tradition. In fact, one of the original purposes for the inclusion of educational psychology in teacher preparation programs was to provide a scientific or intellectual foundation for the practice of teaching (Anderson et al., 1995; Doyle & Carter, 1996). As paradigms have shifted, concerns have arisen regarding the relationship between theory and practice. Authors call for educational psychology to be more relevant, integrated, and prescriptive (Anderson et al., 1995; Shuell, 1996); researchers have discussed the variety of contexts in which educational psychology is currently taught (Rocklin, 1996; Shuell, 1996); and called for more integrated and practically oriented courses (Anderson et al., 1995; Doyle & Carter, 1996; Rocklin, 1996; Shuell, 1996).

The Educational Psychology Division of the American Psychological Association's Ad Hoc Committee on the Teaching of Educational Psychology has called for research and development about teaching educational psychology (Anderson et al., 1995). Although the Ad Hoc Committee and others (Anderson et al., 1995; Shuell, 1996) have described the variety of contexts in which educational psychology is taught, there is not a body of research investigating the outcomes of such variety (Renninger, 1996). For example, Shuell (1996) asserts that educators know little about the effects of using case studies as a method in educational psychology courses. Anderson et al. (1995) question whether the inclusion of reflective practices might enhance the transfer of learning. They

also call attention to the almost impossible amount of information to be addressed in a one-semester educational psychology course.

Research investigating possible differences in outcomes based upon a number of the characteristics along which educational psychology courses vary can add to the theoretical knowledge in terms of the role of educational psychology in teacher education and learning theory. In addition, the knowledge can be used in a more practical way to enhance our content, pedagogy, and faculty development in educational psychology courses, making us more effective in improving educational practices across education.

In response to this call, a research team was formed between two universities in the Chicagoland area. This team includes full-time faculty, part-time faculty, and graduate student instructors assigned to teach multiple sections of undergraduate and graduate level educational psychology courses. Multiple individual studies are contributing in various ways to the ongoing teaching educational psychology research project, the goal of which is to improve the teaching of educational psychology and to examine the role of educational psychology in teacher education. The purpose of this part of that larger study is to investigate the teaching of educational psychology in teacher preparation programs along some of the dimensions noted by Rocklin (1996). These dimensions include student characteristics, instructor characteristics, and institutional/course characteristics. For the present study, the variables of consideration included:

Student characteristics

Age

Gender

Ethnicity

Student Status

undergraduate or graduate

full or part-time

daytime or evening

Major

Instructor characteristics

Experience teaching at college level

Experience teaching at K-12 level

Educational level

Institution/Course characteristics

Placement of educational psychology in the program (early or late)

One- or two-semester sequence

Use of case studies

Class size

Clinical (Field Experience) requirements

Number of reflective activities required

In addition to expecting to find some differences related to or associated with the above variables of interest, the research team developed the following hypotheses:

1. The students in the two-semester course will have more practical applications of theory. They will also indicate a greater tendency to use alternative methods of assessment.
2. The students in the more field-based and later-in-program courses will score significantly higher on the instruction sequencing exercise.

3. Students in the two-semester course will score significantly higher on an assessment of basic educational psychology knowledge.
4. There will be a significant relationship between the instructor's educational level and experience and students' basic educational psychology knowledge.

Methods

Nine educational psychology courses from the Winter 1998 and Summer 1998 terms were used in this research. Each class consisted of 16-33 students, who were predominately undergraduate elementary education majors. Six of the courses were taught at an upper division suburban public university, one at a large urban private university, and two at a large urban public university. The six courses at the upper division public university were part of a two-semester educational psychology sequence. Three of the six were first semester courses of a two-course sequence and the remaining three were second semester offerings in this sequence. The three courses at the other two institutions were all one-semester-only educational psychology courses.

Instructors for the courses were asked to participate in the study. All but two are members of the larger research team. The instructors then distributed the assessments during class periods. They were instructed to inform students that participation was voluntary and that names would not be used after entry into the database. The student response rate ranged from 16 to 100 percent. Pre-assessments were administered to seven of the nine classes, post-assessments to seven of the nine, and five completed both the pre-and post instruments. The pre-assessment consisted of demographic information questions and multiple-choice basic educational psychology theory questions based upon the text used and selected on the basis of a close match with state certification test objectives. The post-assessment included the multiple-choice questions from the pre-

assessment, open-ended questions regarding course content and instruction, an instructional sequence exercise, and one question focusing on knowledge about and preferences toward alternative assessment. In the sections completing only a post-test, demographic information was also collected. Samples of the assessments are available in the Appendix. Syllabi, course descriptions, and instructor vita were also collected in order to determine course and instructor differences. Student grades were collected at the end of the term. Data analysis was conducted using the SPSS for Windows (SPSS, 1998) statistical program.

Results

A total of 181 students completed assessments over the two terms. The sample was predominately white (85%) and female (90%). The students were overwhelmingly full-time (75%) undergraduate (81%) elementary education majors (79%) and attended courses primarily in the daytime (74%). Among the three institutions, 146 of the students attended the suburban upper division public university, 25 the urban private university, and 10 the urban public university. A total of five faculty members participated in the study.

Characteristics of Interest

The first area of interest involved possible variation along student characteristics. These characteristics included age, gender, ethnicity and student status. As noted above, the typical student in this study was a white female full-time undergraduate elementary education major who attended classes primarily in the daytime. As expected, there was a significant difference in student age between institutions (F (2, 163) = 8.26, $p < .0004$). Scheffe' contrasts indicate that the students at the upper division university (no freshmen or sophomores) tended to be significantly older than the students at the four year

universities. They were also more likely to have previously earned a degree ($\chi 2$ (6) = 20.96, $p < .002$). Although there were more females than males at each institution, the proportion of males at each was not different (10-11%). Due to small cell sizes at the four year schools, minor differences in areas such as ethnicity, attendance, and major were found to be statistically significant. However, these differences did not match the published demographics of these schools. Therefore, these variables were not used in further analyses.

The second area of interest concerned differences in instructor characteristics. These characteristics included experience teaching at the college level, experience teaching at the K-12 level, and educational level of the instructor. Years of experience teaching at the college level ranged from one to seven. Years of public school teaching experience ranged from zero to 23. Of the five instructors, three were considered to be ABD (All But Dissertation) level, and two were deemed to be MA+ (Masters Degree plus additional graduate work) in terms of Educational Psychology training. Each instructor's characteristics are summarized in Table 1. Cell sizes were too small to attempt to calculate meaningful statistical differences among instructors. However, later calculations of other response variables used instructor characteristics as possible independent variables.

The final characteristics of interest were differences in institution and courses. These included placement of educational psychology in the program (early or late), a one- or two-semester sequence, the use of case studies, class size, amount of clinical (field experiences) required, and the number of reflective activities required. Students at the four year institutions tended to take the educational psychology course earlier in the program than those at the upper division school. The fact that the upper division school serves only juniors and seniors is not a confound. Syllabi indicate that the educational

psychology courses at the upper division school require more prerequisite coursework than the courses at the four year schools, thus necessitating its later placement in the teacher education program. This is a scope and sequence issue.

Table 1

Instructor characteristics

Instructor:	I	II	III	IV	V
Variable					
College Teaching	7	1	1.5	7	5
K-12 Teaching	0	0	0	23	11
Education	ABD	ABD	ABD	MA+	MA+

All of the institutions offer one-semester educational psychology courses. Only the upper division school offers and requires a two-semester course for its elementary majors. There were a total of 35 students in the one-semester educational psychology courses, 61 in the first of a two-semester sequence, and 85 in the second of a two-semester sequence.

The use of case studies in the educational psychology courses differed in scope. The one-semester educational psychology course at the urban private university utilized three to five cases. The one semester course at the urban public university utilized over six. The upper division school, in its first course utilized one or two and in the second utilized over six. The heaviest case study usage occurred in the second of the two-semester sequence courses. Average class size for the sample was 26 with a standard deviation of 4.87 (n = 181). Differences in class size between courses and institutions

were not calculated due to small cell size, and class size was not a significant factor in later analyses.

The amount of field experiences required in the sample ranged from none to 6-10 hours of observation and a written report. The second semester of two courses did not require any field experience (it was required in the first semester). The most field experience was required by the urban public (one semester) and upper division (first semester course) schools. Both required 6-10 hours of observation and a written report. The amount of field experience was not a significant factor in later analyses.

All of the courses required some reflective activities. The one-semester course at the urban public school and the second of the two course sequence at the upper division school required one to three reflective activities (i.e., individual or group reflective writings or journals). The one-semester course at the private school asked for four to six reflective activities. The first of the two courses at the upper division school asked students to keep a reflective journal with approximately 10 entries. The number of reflective activities was a significant factor with regard to posttest educational psychology knowledge. This analysis will be detailed shortly.

As in the case of the instructor characteristics, the research team really compared only four different educational psychology courses. Cell sizes (three institutions, four courses, or seven sections) were too small to calculate meaningful statistical differences among institutions or courses, but will be utilized in the next calculations for response variables.

Hypotheses Analyses

In addition to expecting to find some differences along the above mentioned variables of interest, the research team developed four hypotheses. The first hypothesis was that students in the two-semester course would have encountered more in-depth and

practical applications of theory and indicate a greater tendency to select alternative methods of assessment. Students in the two-semester course scored better on the sequencing instruction exercise than the one-semester students. However, the differences were not significant (F (2, 113) = 1.89, p < .155). The same result was found for the use of alternative assessment. Students in the two-course sequence did indicate a greater tendency to choose alternative assessment (checked more types they would use), but it was not a significant difference (F (2, 120) = .559, p < .573). The means and standard deviations on alternative assessment use are summarized in Table 2. The first hypothesis was not supported.

Table 2

Indicated probable use of alternative assessments

Course	Mean	Standard Deviation	n
One semester course	6.5	3.9	34
One of two semesters	7.5	4.6	36
Two of two semesters	7.3	4.3	53

The second hypothesis stated that students in the more field-based and later-in-program courses would score significantly higher on the instruction sequencing exercise. There was not a significant difference in the amount of field experience and performance on the sequencing instruction exercise (F (2, 113) = 1.47, p <.23), but students with less field experience performed better on the sequencing instruction exercise. A possible explanation for the inversion of the expected relationship was that the courses with less field experience were also those that happened to occur later in the program. Students taking educational psychology later in their program did perform better on the sequencing

instruction exercise, but the difference was not significant (F (2, 113) = 2.57, p < .08). The second hypothesis was not supported. However, students in the two-semester course did perform significantly better on the sequencing instruction exercise (F (1, 104) = 4.08, p < .046, with Scheffe').

The third hypothesis to be analyzed in this research concerned performance on the multiple choice educational psychology assessments. The hypothesis was that students in the two-semester course would score significantly higher on an assessment of basic educational psychology knowledge. There was a significant difference in post assessment scores based upon course type (F (2, 125) = 7.98, p < .0005). Scheffe' contrasts indicate that students in the second of two semesters did score significantly higher. The third hypothesis was supported. There was also a significant difference in post assessment scores based upon placement of educational psychology in the program (F (2, 125) = 4.6, p < .012). Scheffe' contrasts indicate that students taking educational psychology later in their program scored higher on the assessment. This result is similar to that found in hypothesis two in relation to the amount of clinical experience. Later-in-program courses tended to be those with less field experience. There was a significant difference in post assessment based upon the amount of field experience (F (2, 125) = 8.75, p < .0003). Scheffe' and correlation analyses revealed that students with less field experience performed better (inverse relationship).

The fourth hypothesis for this study concerned the educational level and experience of the instructor in relation to basic educational psychology knowledge. The educational level of the instructor was significantly related to the amount of educational psychology knowledge gained (difference between pre- and posttest) by the student over the course of the term (F (1, 102) = 3.84, p < .05). Students with instructors having higher levels of education in educational psychology (i.e., ABD in Educational

Psychology) showed the greater gain. The amount of college teaching experience held by the instructor was not a significant factor in knowledge gain. The amount of K-12 teaching experience held by the instructor was a significant (but inverse) factor in knowledge gain (F (1, 101) = 4.47, $p < .014$). Scheffe' post hoc indicated that the instructor's amount of K-12 teaching experience was inversely related to knowledge gain with K-12 experience being related to negative gain.

One final analysis was conducted for this study. Variables significantly correlated with post assessment scores were loaded into a stepwise regression analysis. Four variables significantly contributed to the equation (F (4, 107) = 17.796, $p < .00001$). In order of step (and amount of variation accounted for at each step), the variables were grade for the course (r2 = 16.3%), instructor degree (r2 = 28.1%), number of reflection activities (r2 = 36.7%), and age of student (r2 = 40%). As discussed previously, the number of reflection activities was inversely related. The standardized beta weights, t scores, and significance are presented in Table 3.

Table 3

Multiple regression for post assessment

Variable	Beta	t score	Significance
Grade	12.165	5.55	.00001
Instructor Degree	14.610	4.87	.00001
Reflection	-9.380	-3.42	.0009
Age	.395	2.39	.0184

Discussion

Is the purpose of educational psychology in teacher training to provide theory or practical knowledge? Teachers need to know how to apply the theories to teaching and learning in their classrooms. This study has not settled this question. However, in the last few years there has been an increase in the development and requirement of standardized testing for the certification of educators. The National Teachers Examination (NTE) and Pre-Professional Standards Test (PPST) are but examples. The objectives for these and other tests are heavily theory based. Thus, one conclusion would be that theory is important in teacher training programs. The state of Illinois uses its own test for certification, the objectives of which served as a basis for the selection of the questions from the text test banks in this research. The students in this study who had an instructor with advanced training in educational psychology showed significant gain in theoretical knowledge when compared to the gains of students who had instructors without that training. A review of the programs participating in this research indicates that the educational psychology courses provide a theoretical support, or foil, for the practical knowledge gained through curriculum and methodology coursework.

This study looked at practical knowledge from a view of the students' ability to sequence instruction and their awareness and tendency to use alternative assessment. The results lead to a general conclusion that educational psychology is a subject that should be taken by preservice educators following some preliminary education courses. Students in this study scored higher on educational psychology knowledge and practical applications such as sequencing instruction if they had completed their educational psychology course(s) later-in-program.

One of the questions in the introduction concerned the almost impossible amount of information to be covered in a one-semester educational psychology course.

Therefore, an important component of this study was the comparison between the one- and two-semester sequences. Conversations with instructors of the two-semester sequence indicate unanimous preference for this method of delivery. The instructors overwhelmingly believed that the material could be covered in greater detail and depth, with increased attention given to practical applications. Students in the two-semester course did significantly better on knowledge basic theory. Although not significant, they also scored higher on sequencing instruction and were more likely to use alternative assessments.

All of the results, however, may be limited by the placement in the program of the courses and the small number of course types studied. Although there were 181 students who participated in this research, there were only five instructors, three institutions, and four different courses. As stated previously, some of the samples were not representative of some of the published demographics for the institutions. Further research is needed that looks at a larger sample with more instructor and course variation. For example, we need to find if there are any two-course sequences that occur earlier in programs and compare their results with those of students enrolled in such a sequence later in program. More variation in the characteristics, course types, and institutions could allow us to examine at the effects of using cases and reflective practices with placement in the program as a factor instead of a confound. We could also investigate whether the predictive equation for posttest scores would hold true.

A larger sample would also allow us, moreover, to begin to look at the integration of educational psychology into those programs. For this study, educational psychology seemed to be better integrated into the program at the upper division public school where it is taught as the two-course sequence, in which the students tended to score higher on the measures used in this study. This two-course sequence was taught by faculty within

the program (division) who also cross taught in other courses in the program. The courses were identical in syllabi, text, activities, and evaluation. The faculty met regularly. The courses at the other institutions were taught by faculty outside of the program (division). The syllabi, texts and activities were of great variety. There was also a greater use of adjunct faculty. These factors, and others, could all be investigated in a larger study.

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Appendix

Governors State University/Loyola University Chicago
Research Project on the Teaching of Educational Psychology

Pre-Assessment

EDUC 440 (GSU) **Section Code:_____**

Thank you for agreeing to participate in this collaborative research effort. Although we will ask you to fill in your name and phone number on this questionnaire, they will not become a part of the database or be published in any way. We are asking for your name simply to match your responses here with your answers to another questionnaire you will complete at the end of the term. Your phone number may be used by one of the researchers to contact you for a short phone interview after the course is over, but it will not be released in any other way. Names and phone numbers will be destroyed after the data are collected and entered into the database. Database entries are then anonymous.

Name:_____Phone number (area code):_____

Today's Date:_____

Demographic Questions:

Age in years:_____

Sex: (Circle one) Female Male

Ethnicity: (Circle Applicable)
White (Non-Hispanic)
Black (Non-Hispanic)
Hispanic
American Indian or Alaskan native
Asian or Pacific Islander
Other

Education Status Questions:

Present Major:_____

Attendance: (Circle One) Full time Part time

Status: (Circle One) Graduate Undergraduate

Previous Degree(s):_____

Do you attend classes primarily: Daytime Evening

Educational Psychology Knowledge (Pretest)
Please answer these questions to the best of your ability. Guessing is allowed.

1. According to Piaget, people's need for order, structure, and predictability is called:
   a. development
   b. learning
   c. maturation
   d. equilibrium

2. Which of the following are essential to Vygotsky's view of development?
   a. Social interaction and activity
   b. Close emotional relationships with adults and peers
   c. Adaptation through experimentation
   d. Individual trial and error and experimentation

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3. Using Gardner's theory of intelligence, in which of the following dimensions would sales people be most likely to score highly?

a. Intrapersonal Intelligence
b. Linguistic Intelligence
c. Logical-Mathematical Intelligence
d. Interpersonal Intelligence

4. Consider the effects on students of being labeled "intellectually slow" or "academically weak", compared to students with similar characteristics who are not labeled. Which of the following is the most accurate statement according to research?

a. Because they're identified, teachers provide more attention and support for labeled students
b. Teachers provide less attention and support for labeled students than for comparable peers
c. Teachers provide about the same structure and support

5. Social learning theory is best described as a view of learning that:

a. emphasizes the social interactions that occur among students in classrooms.
b. emphasizes the ways that students perceive and think about problems.
c. emphasizes the effects of observing others on students' thoughts and behaviors.
d. emphasizes the strategies that students use to solve interpersonal problems.

6. Of the following, working memory is also sometimes called:

a. sensory memory
b. episodic memory
c. semantic memory
d. short-term memory

7. The advantages of utilizing authentic tasks to teach problem solving include:

a. providing a meaningful context for learning
b. increasing the likelihood of transfer
c. motivating students
d. increasing opportunities for repetition and reward

8. Which of the following teacher statements most promotes a learning-focused rather than performance-focused classroom?

a. "Let's try hard now. I want to see a lot of A's and B's on the next test."
b. "Very well done. Every person in the class improved on their scores compared to the last quiz."
c. "Very good, everyone. Over half the class got either an A or a B on the last test."
d. "C'mon now. Let's give some of these top students a run for their money on this assignment."

Governors State University/Loyola University Chicago
Research Project on the Teaching of Educational Psychology

Post-Assessment

EDUC 540 (GSU) **Section Code:_____**

Thank you for agreeing to participate in this collaborative research effort. Although we will ask you to fill in your name and phone number on this questionnaire, they will not become a part of the database or be published in any way. We are asking for your name simply to match your responses here with your answers to another questionnaire you will complete at the end of the term. Your phone number may be used by one of the researchers to contact you for a short phone interview after the course is over, but it will not be released in any other way. Names and phone numbers will be destroyed after the data are collected and entered into the database. Database entries are anonymous.

Name:_____Phone number (area code):_____

Today's Date:_____

Educational Psychology Knowledge (Posttest)
Please answer these questions to the best of your ability. Guessing is allowed.

1. Which of the following teacher statements most promotes a learning-focused rather than performance-focused classroom?
   a. "Let's try hard now. I want to see a lot of A's and B's on the next test."
   b. "Very well done. Every person in the class improved on their scores compared to the last quiz."
   c. "Very good, everyone. Over half the class got either an A or a B on the last test."
   d. "C'mon now. Let's give some of these top students a run for their money on this assignment."

2. Which of the following systems of discipline advocate that rules be prominently displayed in the classroom and that teachers employ a simple system for setting consequences?
   a. Assertive Discipline
   b. Glasser's ten step program
   c. Jones "Discipline with Dignity" approach
   d. The Dreikur's Democratic Discipline format

3. Which of the following is NOT emphasized by the learner-centered psychological principles?
   a. Intrinsic motivation to learn
   b. Developmental factors in learning
   c. Reinforcement for desired behavior
   d. Individual differences in learning

4. The basic direct instruction model consists of the phases: introduction and review, presentation, and independent practice. In addition, the model also includes an additional phase, which is:
   a. planning and organization
   b. learning activities
   c. evaluation
   d. guided practice

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5. A major asset of the discovery learning approach is that it:
    a. makes instruction more learner centered
    b. takes less time than other methods
    c. makes the teacher's tasks less complex
    d. works for all types of students

6. On what cognitive level do most teachers tend to write most of their test items?
    a. Knowledge
    b. Comprehension
    c. Application
    d. Analysis
    e. Synthesis

7. Test content and/or procedures that favor one culture over another is defined as:
    a. diagnostic testing
    b. biased testing
    c. aptitude testing
    d. minimum competency testing

Content Evaluation Questions:
How do you think learning occurs? (Answer in 1-2 sentences)

Please list any examples of things done in this course that addressed how you as a teacher can diversify instruction to meet individual differences? (i.e., multiple intelligences, learning styles, cultural diversity)

How do you think teachers can best stimulate students' higher order or critical thinking skills?

What are strategies teachers can use to help students become self-motivated?

Alternative Assessment
For each of the assessment possibilities listed below, place a check mark (√) by those you discussed in your ed. psyc. class. In addition, put a star (*) by those you think you might use in your classroom.
Written exams/Quizzes
Portfolios
Projects
Research Papers
Thought Papers
Reflective Journals
Presentations
Case Studies
Verbal Questioning

Sequencing Instruction Exercise

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